Journal of Science Education and Technology

Vol. 8, No. 1 March 1999

CONTENTS

Introduction to the Issue 1
Karen C. Cohen

Thinking in Levels: A Dynamic Systems Approach to Making Sense of the World 3
Uri Wilensky and Mitchel Resnick

Some Recent Developments in Teacher Education in Mathematics and Science: A Review and Commentary 21
Sheila Tobias

Hands-on Computer Use in Science Classrooms: The Skeptics Are Still Waiting 33
Alan Runge, Amy Spiegel, Lisa M. Pytlik Z., Steven Dunbar, Robert Fuller, Glenn Sowell, and David Brooks

WEBSLIDE: A "Virtual" Slide Projector Based on World Wide Web 45
Maria Barra, Salvatore Ferrandino, and Vittorio Scarano

Evaluation of Interactive Media in Science Education 55
David Kumar and James Altschuld

School Students' Ideas About Air Pollution: Hindrance or Help for Learning? 67
Jillian Thornber, Martin Stanisstreet, and Edward Boyes

Elementary Pre-Service Teacher Perceptions of the Greenhouse Effect 75
Fred H. Groves and Ava F. Pugh

Overcoming Junior High School Students' Misconceptions About Microscopic Views of Phase Change: A Study of an Analogy Activity 83
Chin-Chung Tsai

Journal of Science Education and Technology

Vol. 8, No. 2 **June 1999**

CONTENTS

A KARPLUS LECTURE

Learning as Transformation 93
Bob Samples

ARTICLES

The Effect of a Prior Dissection Simulation on Middle School Students' Dissection Performance and Understanding of the Anatomy and Morphology of the Frog 107
Joseph Paul Akpan and Thomas Andre

Level of Internet Use Among Science Teachers Involved in a Professional Development Project 123
Randall L. Wiesenmayer and Ravinder Koul

The Effects of STS Issue Investigation and Action Instruction Versus Traditional Life Science Instruction on Seventh Grade Students' Citizenship Behaviors 137
Randall L. Wiesenmayer and Peter A. Rubba

The Role of Idealization in Science and Its Implications for Science Education 145
Mansoor Niaz

An Internet-Based Course: Leadership Issues 151
L. James Walter, Daonian Liu, and David W. Brooks

Increasing Science Awareness Through an Unusual Book 155
Stuart Samuel

Alternative Conceptions in Biology-Related Topics of Integrated Science Teachers and Implications for Teacher Education 161
Se Yuen Mak, Din Yan Yip, and Choi Man Chung

Journal of Science Education and Technology

Vol. 8, No. 3 **September 1999**

CONTENTS

Announcement 171
Karen C. Cohen

What Students Should Know About Technology: The Case of Scientific Visualization 175
Jeffrey S. Friedman and Andrea A. diSessa

Visualization and Representation of Physical Systems: Wavemaker as an Aid to Conceptualizing Wave Phenomena 197
Philip M. Sadler, Charles A. Whitney, Linda Shore, and Freeman Deutsch

The Motion Picture in Science Education: "One Hundred Percent Efficiency" 211
Kenneth P. King

On-Line "Chat Room" Tutorials—An Unusual Gender Bias in Computer Use 227
Doris R. Kimbrough

Identifying and Addressing Students' Alternative Conceptions of the Causes of Global Warming: The Need for Cognitive Conflict 235
George Meadows and Randall L. Wiesenmayer

Building a Case for a Sociocultural and Inquiry-Oriented View of Science Education 241
Derek Hodson

Journal of Science Education and Technology

Vol. 8, No. 4 **December 1999**

CONTENTS

Visual Chemistry: Three-Dimensional Perception of Chemical Structures 251
Alexandru T. Balaban

High School Chemistry Students' Performance and Gender Differences in a Computerized Molecular Modeling Learning Environment 257
Nitza Barnea and Yehudit J. Dori

Teaching Contemporary Physics Topics Using Real-Time Data Obtained via the World Wide Web 273
A. P. Post-Zwicker, W. Davis, R. Grip, M. McKay, R. Pfaff, and D. P. Stotler

"Hebdo-Chim," a Web Application to Support Learning in a Chemistry Methods Pre-Service Course 283
Jesús Vázquez-Abad

Obstacles Confronting Technology Initiatives as Seen Through the Experience of Science Teachers: A Comparative Study of Science Teachers' Beliefs, Planning, and Practice 291
Randy Yerrick and Timothy Hoving

A Student Evaluation of Molecular Modeling in First Year College Chemistry 309
Julie B. Ealy

Conflict of Learning Styles: University Science Lectures in the Sultanate of Oman 323
Christopher Arden-Close